



**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

GOMI et al

International Appln. No.: PCT/JP2003/010076

Filed: Concurrently herewith

Attorney Dkt. No.: 59349.00023

For: LEGGED MOBILE ROBOT

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

February 22, 2005

Sir:

Prior to calculation of the filing fees and initial examination of the application, please amend the above-identified application as set forth below.

**Amendments to the claims are submitted on page 2.**

**Remarks are submitted on page 6.**

## IN THE CLAIMS:

Please amend claims 1, 3, 4, 6-11 and 13 as follows.

1. (Currently Amended) A legged mobile robot having a body, and a plurality of articulated legs each connected to the body ~~equipped with articulated legs~~ such that it moves by driving each leg by an actuator associated therewith, comprising ~~characterized in that:~~

~~each leg has at least~~ a first joint installed at each leg; and

a second joint installed at each leg at a location ~~located~~ below the first joint in the gravitational direction;

wherein ~~that~~ the actuator that drives the second joint is located at least one of a position same as that of the first joint and a position above the first joint in the gravitational direction.

2. (Original) The legged mobile robot according to claim 1, wherein at least one of an output shaft of the actuator that drives the second joint and an output shaft of a transmission element to which an output of the output shaft of the actuator is transmitted, is located coaxially with an axis of the first joint, and the second joint is connected to the output shaft located coaxially with the axis of the first joint to be driven through a rod.

3. (Currently Amended) The legged mobile robot according to claim 1 ~~or 2~~, wherein the second joint has rotation axes that are arranged in at least two different directions.

4. (Currently Amended) The legged mobile robot according to claim 1 ~~one of claims 1 to 3~~, wherein the second joint is driven by a plurality of actuators and is

connected to at least one of output shafts of the actuators and output shafts of transmission elements to which outputs of the output shafts of the actuators are transmitted, to be driven through a plurality of rods.

5. (Original) The legged mobile robot according to claim 4, wherein the rods are located to be spaced by prescribed distances from axes of the second joints.

6. (Currently Amended) The legged mobile robot according to claim 1 ~~one of claim 1 to 5~~, wherein the second joint is one among the joints that the legs have, that is located farthest toward a ground-contacting end.

7. (Currently Amended) A legged mobile robot having a body, and a plurality of articulated legs each connected to the body ~~equipped with articulated legs~~ such that it moves by driving each leg by an actuator associated therewith, comprising ~~characterized in that:~~

~~each leg has at least~~ a first joint installed at each leg;

a second joint installed at each leg at a location ~~located~~ below the first joint in the gravitational direction; and

a speed reducer to which an output of the actuator that drives the second joint is transmitted;

wherein ~~that~~ an input shaft of the speed reducer is located coaxially with an axis of the first joint.

8. (Currently Amended) A legged mobile robot having a body, and a plurality of articulated legs each connected to the body ~~equipped with articulated legs~~ such that it

moves by driving each leg by an actuator associated therewith, comprising ~~characterized in that:~~

~~each leg has at least~~ a first joint installed at each leg;

a second joint installed at each leg at a location~~located~~ below the first joint in the gravitational direction;

a link that connects the first joint and the second joint; and

a speed reducer to which an output of the actuator that drives the second joint is transmitted;

wherein~~that~~ a base of the speed reducer is located at the link that connects the first joint and the second joint.

9. (Currently Amended) The legged mobile robot according to claim 7 ~~or 8~~, wherein an output shaft of the speed reducer is located coaxially with the axis of the first joint, and the second joint is connected to the output shaft of the speed reducer to be driven through a rod.

10. (Currently Amended) The legged mobile robot according to claim 7~~one of claim 7 to 9~~, wherein the second joint has rotation axes that are arranged in at least two different directions.

11. (Currently Amended) The legged mobile robot according to claim 7~~one of claims 7 to 10~~, wherein the second joint is driven by a plurality of actuators and is connected to output shafts of the speed reducers to which outputs of the actuators are transmitted, to be driven through a plurality of rods.

12. (Previously Presented) The legged mobile robot according to claim 11, wherein the rods are located to be spaced by prescribed distances from axes of the second joints.

13. (Currently Amended) The legged mobile robot according to claim 7 ~~one of claim 7 to 12~~, wherein the second joint is one among the joints that the legs have, that is located farthest toward a ground-contacting end.

**REMARKS**

Claims 1-13 are pending in this application. By this Amendment, claims 1, 3, 4, 6-11 and 13 are amended to correct the multiple dependencies thereof and to place this application into better condition for examination. No new matter has been added.

In the event that there are any fees due with respect to the filing of this paper, please charge Counsel's Deposit Account No.50-2222.

Respectfully submitted,

SIGNATURE ON  
ORIGINAL

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